

Using X3D to Visualise Three Dimensional Geoscience Information via the Internet

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Technologies for visualising 3D geospatial information via the Internet have advanced very rapidly in recent years, most notably with Google Earth. Advancements are also being made with the use of Extensible Markup Language (XML) technologies to improve interchange efficiency for geospatial data, chiefly through Open Geospatial Consortium (OGC) efforts. X3D (Extensible 3D), an XML format for interchange and web display of 3D information, combines these two areas of development. X3D is the successor to the Virtual Reality Modelling Language (VRML) which Geoscience Australia (GA) has been using since 2001 to enable clients to visualise 3D geoscience information via the Internet. Recently GA has undertaken work to migrate from VRML to X3D. An X3D model of global seismological data was created and published on the Internet. In developing this model, GA tested multiple technologies for sharing X3D data via the Web. Obstacles were encountered and solutions developed. The technology employed uses similar elements to GA's VRML models: X3D in association with HTML, JavaScript and web browser plug-ins. Geoscience Australia plans to continue developing X3D applications, exploring integration of distributed 3D datasets and implementing planned improvements to X3D's geospatial capabilities.